PORTICO
Vancouver, British Columbia

RELEVANT GROWTH PLAN POLICIES
Policy 2.2.3.7 (b, c, d, e, f): Plan and design intensification areas to provide a diverse mix of land uses to support vibrant neighbourhoods; provide high quality public open spaces with urban design standards that create attractive and vibrant places; support transit, walking and cycling; and achieve higher densities than the surrounding area, with an appropriate transition of built form to adjacent areas.

PROJECT OVERVIEW
The Portico development transformed an underused brownfield (the former Pacific Press site) into a higher density, mixed-use, infill development that is pedestrian- and transit-friendly. Located in Vancouver, British Columbia at the base of the Granville Street Bridge, Portico is a gateway to the city core.

The 4 ha (10 ac) Portico development is part the Fairview community, which is south of downtown Vancouver. Fairview consists of mostly low- and high-rise condominium and rental apartment buildings and a large number of commercial and industrial buildings. At 118 dwelling units per hectare, Portico’s residential density is more than double that of the entire Fairview community, at 52.2 dwelling units per hectare.¹


PROJECT DATA
 Residents and Jobs Per Hectare: 322
 Ratio of Jobs to Residents: 1:18
 Gross Residential Density: 118 units/ha (48 units/ac)
 Site Area: 4.05 ha (10 ac)
 Land Use
 Residential: 437 condominium apartments, 39 condominium townhouses
 Commercial: 6 retail units, 943m² (10,150 ft²)
 Maximum Height: 20 storeys
 Transit: local bus service
 Parking: retail - 20 spaces, underground parking - 892 spaces, bicycle parking - 661
 Date Completed: 2005
 Developer: BOSA Development Corporation
 Designer: Perkins and Company

View of Carrara Tower from Granville Loop Park

Image courtesy of Perkins and Company
Within the Fairview community, Portico is in Burrard Slopes, a mixed-use neighbourhood of housing, offices, industrial firms and shops. Two other Fairview neighbourhoods border the site: to the east is Fairview Slopes, a predominantly three-storey residential mixed-use area, and to the south is South Granville, an 11-block shopping district of higher-end stores on Granville Street, between 5th Avenue and 16th Avenue. The Portico development extends the residential fabric west from Fairview Slopes and the retail presence north along Granville Street.

Built in two phases, the redevelopment has resulted in 39 townhouse units and five new buildings, including 476 residential units in condominium apartment buildings and six retail units fronting Granville Street.

**PLANNING CONTEXT**

The City of Vancouver does not have a significant supply of developable greenfield land, so growth is largely accommodated through redevelopment and infill. Housing opportunities have been created by rezoning some areas that were traditionally industrial and commercial to allow for residential development.

In the 1980s, the City rezoned the Burrard Slopes neighbourhood (including the Portico site) from an industrial to a commercial zoning designation (known as C3-A) that allows for a mix of development, including residential. As a result of that rezoning, the Burrard Slopes neighbourhood has been undergoing a steady change from industrial to residential over the past 20 years.²

The Portico site became available for redevelopment in 1997, after Pacific Press operations moved to Surrey, B.C. The site was cleared in 1998 and close to 95 per cent of the demolition materials were recycled for other building purposes.

**TRANSPORTATION AND TRANSIT**

Portico is well served by transit. It has six bus routes within a five-minute walk of the neighbourhood, on three bordering streets (5th Avenue, Granville, and Hemlock) and two nearby streets (4th Avenue and Broadway).

As part of the strategy to enhance the new neighbourhood, city council approved significant road network modifications to re-establish the former street grid, linking it back to the surrounding community. The changes also provided opportunities for new public open space amenities.³

Key changes were the removal of an on-ramp to the Granville Bridge, which provided a site for a new neighbourhood park (Granville Loop

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Park) and the reopening of 5th Avenue, between Hemlock Street and Granville Street, which provided a new mid-block connection along 5th Avenue. The re-opened 5th Avenue includes a new bus waiting area, which provides convenient transit access to people living and working in the Portico neighbourhood.

The development’s compact neighbourhood block structure supports easy pedestrian and bicycle travel through the site. A north-south mid-block pedestrian walkway between 7th Avenue and Granville Loop Park gives pedestrians a connection to Granville Island and False Creek, and a bicycle route on 7th Avenue provides bicycle access to the site.

There are 20 on-street parking spaces, 892 underground parking spaces and 661 bicycle parking spaces on site.

PUBLIC REALM AND BUILT FORM

After rezoning Burrard Slopes, the City established the Burrard Slopes C3-A Guidelines in 1993 (amended in 1998). The document directed development of the Portico site through specific guidelines for urban design, neighbourhood character, architectural features, the provision of community amenities, public open space and streetscape elements.  

The site has landscaped 3.5 m (12 ft) building setbacks on all edges, except on Granville Street, which is the retail facade. The street edges are defined by four-, five- and six-storey buildings fronting the streets, landscaped courtyards, and articulated facades with varying contemporary architectural details, balconies, overhangs, and floor-to-ceiling windows.

The 1.6 ha (4 ac) Granville Loop Park was completed in 2000 and features a water wall, children’s play area and tennis courts. It was the first public park in Vancouver financed through a development cost levy and was supplemented by additional funding from the developer, BOSA Development Company.  


and view corridor between 7th Avenue and the park provide additional publicly accessible open space.

Although the site was designed by a single firm, Vancouver-based Perkins and Company, and developed by a single company, BOSA Development, a concerted effort was made to ensure that the built form and architectural design were varied. This was achieved through the development of different building types, ranging from four-storey townhouses to five-storey mid-rise blocks and eleven-, fifteen- and twenty-storey towers. Different colour palettes and design elements used for each building also provided diversity.

The site’s buildings step down in height from high-rise at the middle of the blocks to mid- and low-rise along the edges. This array creates an effective transition in built form to the surrounding context, which is bordered by two- to eleven-storey mixed use and institutional buildings to the south, the low-rise Granville Street retail strip to the west, and the low-rise Fairview Slopes neighbourhood to the east.

WEBSITES
www.bosadev.com/verona/start.htm
www.lestwarog.com/verona/
www.vancouver.ca/commsvcs/guidelines/B011.pdf
www.vancouver.ca/commsvcs/cityplans/majorinfo.htm
RELEVANT GROWTH PLAN POLICIES

Policy 2.2.3.7 (b, c, d, e, f): Plan and design intensification areas to provide a diverse mix of land uses to support vibrant neighbourhoods; provide high quality public open spaces with urban design standards that create attractive and vibrant places; support transit, walking and cycling; and achieve higher densities than the surrounding area, with an appropriate transition of built form to adjacent areas.

Policies 2.2.6.4 and .10: Locate major office in areas with existing frequent transit service and plan employment lands to have transit-supportive, compact built form and minimize surface parking.

PROJECT OVERVIEW

The Selkirk Waterfront Community is an award-winning, pedestrian-oriented, mixed-use, brownfield redevelopment project that includes affordable housing and sustainable building and landscape development. Significant employment and institutional tenants on site include the Government of British Columbia.

Selkirk Waterfront is in Victoria’s Burnside neighbourhood, which is two kilometres (a 15- to 20-minute walk) north of downtown. The Burnside neighbourhood contains most of the city’s commercial and industrial properties. Burnside also has a significant supply of condominium and rental apartments, which comprise three-quarters of its dwelling units.
Selkirk Waterfront links the Burnside neighbourhood to the Gorge Waterway, which was previously inaccessible due to former industrial uses along its edge. The new development gives its residents and the rest of the Burnside neighbourhood access to a multi-use, vibrant, public amenity on the water.

The 9.7 ha (24 ac) Selkirk Waterfront site was formerly the Victoria Sawmill. The project developer, Jawl Development Corporation, purchased the site from Fletcher-Challenge Canada Ltd. in 1991, after the remaining buildings were removed and the soil was remediated.

The new Selkirk Waterfront development includes a wide range of uses, including light industrial (Terasen Gas’ Vancouver Island Headquarters), commercial/office, residential, institutional (B.C. Ministry of Environment, Montessori school, and daycare), and services (restaurants and stores).

A concerted effort was made to ensure that the land use mix was integrated with the urban design vision for the site. As a result, the community transitions from more intense industrial uses at the south end to residential and open space uses in the north, as illustrated in the land use structure map. For example, Terasen Gas (light industrial) and Sawmill Point (commercial development) provide a major buffer to the existing industrial activities to the south, and the central office/commercial spine creates a transition to the residential areas to the northwest. This approach ensures that residents and industrial tenants can successfully co-exist in the community.1

Residences are largely four-storey buildings with units that range from 74 m² to 195 m² (800 ft² to 2100 ft²) and townhouse units that allow for live/work arrangements. The variety of housing accommodates diverse residents and household types.

PLANNING CONTEXT

Selkirk Waterfront was developed using Comprehensive Development zoning, a planning tool the Government of British Columbia introduced in 1983 to give municipalities more flexibility in allocating density and land uses on particular sites and the opportunity to negotiate for public amenities and affordable housing.2

The City of Victoria’s Comprehensive Development (CD) Zoning By-law requires a municipally approved site-specific Comprehensive Development Plan and accompanying guidelines to direct and shape the development. Specifically, the CD zone “allows the developers to transfer some of the floor space allocation for office/commercial to

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residential; [lets the developer] use height and massing dimensions, not floor area ratio or floor space ratio, as the main building criteria to allow for innovation within the building envelope; provides the developer with some flexibility as to what density and types of suites are developed; and gives the municipality security that what is approved as the CD zone plan and design guidelines will direct development.\textsuperscript{3}

The Selkirk Waterfront plan was the first Comprehensive Development Plan undertaken and approved by the City of Victoria. It established a number of precedents that have shaped the City’s approach to community development and approvals, including an extensive community consultation process and the use of a ‘Form Based Code’. As a result, the City now requires all developers in Victoria to consult with local neighbourhood stakeholders before submitting a development permit application.

The developer’s proactive approach to consultation, which included opening the site’s project office to the public for two nights a week for eight months, allowed the public to provide input into the planning and design and see how their input contributed to the plan’s formation. This consultation strategy was so successful that the local community association fully endorsed the development application when it was submitted to city council.\textsuperscript{4}

TRANSPORTATION AND TRANSIT

Selkirk Waterfront is served by two local bus routes on a bordering street (Gorge Road) within a five-minute walk and the Victoria Harbour Ferry, which stops on site. The ferry is mainly a tourist attraction but provides regular service (every 15-20 minutes) across the harbour during spring and summer.

The development is next to the Galloping Goose Regional Trail, a paved cycling and pedestrian trail that crosses the Gorge Waterway on the Selkirk Trestle Bridge and is used as a key bicycle commuting route into downtown. The number of people who cycle to work in the Selkirk community is more than double the regional average. To support commuter cycling, every building has bicycle parking, lockers and showers.\textsuperscript{5}

A key innovation of the Selkirk Waterfront Community is integrating street design and transportation objectives.

“Traffic planning for the Selkirk Waterfront has been conducted in a manner which rejects the philosophy that the unencum-

bered rapid movement of the private automobile is the primary criterion for the design of streets and intersections. It takes instead as its starting point the desire for an increased quality of life on and around one of the most significant portions of the urban public domain, the street.” \textsuperscript{6}

Street design within the community is based on the concept of passive traffic calming, whereby streets are shared by all users. The theory behind this concept is that if cars travel slowly enough, they do not require separate infrastructure. Therefore, streets also function as bicycle and pedestrian routes and have been narrowed and constructed with soft edges to blur the boundary between vehicular and pedestrian areas. Additional traffic-calming features include traffic circles, landscaped medians, raised intersections and textured brick pavement.\textsuperscript{7}


\textsuperscript{4} Ibid.

\textsuperscript{5} Ibid.


All residential parking is underground, and above-ground parking is minimized by serving different users: office workers during the day and recreational users in off-peak hours and on weekends.\(^8\)

**PUBLIC REALM AND BUILT FORM**

The design for Selkirk Waterfront aimed to create a vibrant, urban, mixed-use community that would take advantage of the site’s prime waterfront location and proximity to downtown. Zoning the area as Comprehensive Development required creating the *Selkirk Waterfront Design Manual* to accompany the Comprehensive Development Plan. Together these documents were the first ‘Form Based Code’ used for a large project in Victoria.

The design manual, which deHoog D’Ambrosio Rowe Architects developed on behalf of Jawl Holdings Ltd., in close consultation with City staff, established overall urban design objectives; provided details for the site layout; and established development permit requirements related to building character, massing, height, cladding, colour, signage, bicycle and automobile parking, and pedestrian walkways. The design manual also included specific measures for the design of safe public spaces based on the concept of ‘eyes on the street’.

Some of the key urban design objectives articulated in the manual include:

- Reconnecting the waterfront with the whole Burnside neighbourhood;
- Maintaining a continuous and publicly accessible waterfront;
- Ensuring a simple and rational street and block pattern;
- Accommodating pedestrians and cyclists in the streets;
- Ensuring historical elements (from both indigenous and industrial histories) are reflected in the site and landscape design;
- Ensuring a variety of housing types to support diverse residents;
- Encouraging mixed-use development, particularly the vertical mixing of uses to animate streets;
- Providing opportunities for broad consultation and cooperation with the public and city departments to ensure that the plan meets both the City’s goals and community’s objectives for the development; and,
- Allowing for a phased approach so the development can be implemented incrementally.

Guided by the manual, high quality public space at Selkirk Waterfront is created by the combination of a human-scaled system of streets and open space; mid-rise building frontages that are well-articulated and animated by generous windows and balconies; and well-integrated landscape elements that are rich in greenery and historical references.

The open space system connects the community and links the waterfront to the larger municipal greenway system. There are a variety of open spaces and parks, ranging from the Selkirk Green Park - centrally located to provide for informal outdoor activities - to the Railspur Boardwalk, providing a continuous waterfront link that connects Cecelia Cove Park with Sawmill Point. Sawmill Point is the

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\(^8\) Ibid.
focal point and activity hub of the open space system - restaurants, retail and the Gorge Rowing and Paddling Club are located there.

The residential buildings’ contemporary architectural style is inspired by the industrial heritage of the former sawmill site and emphasized with the use of steel, brick, concrete, and cedar.

ENERGY AND ENVIRONMENTAL SUSTAINABILITY

Sustainable development and green building initiatives are found throughout Selkirk Waterfront. The mixed-use zoning is the foundation upon which the development was built - it provides the opportunity for a mix of residential, workplace, retail and institutional uses within walking distance of each other, thereby reducing dependence on the private automobile.

Other sustainable elements include:

- Recycled, crushed glass road sub-surface;
- Sand-set concrete unit paving;
- Shielded source, low-height, high-efficiency lighting;
- Bicycle parking at each building and public space;
- Re-use of remnant on-site structures;
- Indigenous, non-irrigated plants and transplanted trees in public areas;
- Traffic calming tree-bulges and traffic circles;
- Bicycle paths and accessible walkways;
- Oil skimmer catch basins on parking and street drains;
- Recycling rooms; bike lock-up and rider facilities; car-pool parking;
- Low emissivity glazing and other solar controls;
- Bio-swale/constructed wetland treatment of roof run-off;
- Green roofs over underground parking; and,
- Specification of building materials with low ecological impact such as concrete with high fly-ash content.  

The South Circle Building, a four-storey wood and concrete frame building with residential units above commercial uses, received Leadership in Energy and Environmental Design Commercial Interiors (LEED-CI) Gold Certification in 2006 for the studio/office of D'Ambrosio architecture + urbanism.

FINANCING INNOVATIONS

Part of the success of the Selkirk Waterfront Community was the developer’s use of innovative financing strategies to cover infrastructure and streetscaping costs.

Before rezoning the site in 1992 to Comprehensive Development, Jawl Development used the existing Heavy Industrial zoning to successfully
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bid on a ten-year lease agreement for Centra Gas’ (now Terasen Gas) Vancouver Island headquarters and post-emergency response facility. The revenues generated through the lease were used to finance the infrastructure costs for the remainder of the development.

Following the 1992 rezoning, a parcel of the property was sold to B.C.’s Ministry of Environment for a new office building. The land sale proceeds were used to enhance the development’s residential streetscapes.\textsuperscript{10}

The Selkirk Waterfront Community includes a social housing component of 45 non-market units, Jackladder Lane Housing, which was built with a grant from the BC Housing Management Commission. An assisted care facility of 41 units, Selkirk Place, was built by Ahern Group on land owned by the Vancouver Island Health Authority.\textsuperscript{11}

**AWARDS\textsuperscript{12}**

The Selkirk Waterfront development has been widely recognized for its success and design excellence. To date it has received:

- Royal Architectural Institute of Canada (RAIC) Urban Architecture Award, Selkirk South Circle (300 Waterfront Crescent), 2006
- ‘Smarty’ - Smart Growth BC Award, projects that feature heritage, conservation and adaptive reuse, 2006
- Canadian Urban Institute (CUI) Brownie Award, Heritage/Adaptive Reuse, 2005
- Victoria Real Estate Board (VREB) Commercial Building Award, Best New Commercial Office for Garbally Landing (401 Garbally Road), 2005
- BC Wood Design Award, Canadian Wood Council Award for Multi-Unit Residential: South Circle (300 Waterfront Crescent), 2005
- Care Award – Silver, Best Multi-Family Development for Jackladder Lane (380 Waterfront Crescent), 1999
- Excellence on the Waterfront Award, The Waterfront Centre, Selkirk Waterfront Community, 1997
- Best Single Use Building, VREB Industrial, Commercial and Investment Award for Centra Gas Operations Centre (320 Garbally Road), 1993


\textsuperscript{11} Ibid.


**WEBSITES**

www.selkirkwaterfront.com
www.wcel.org/issues/urban/sbg/casestudies/Selkirk/
www.jawlproperties.com/office-retail-victoria-bc.php
PORT CREDIT VILLAGE, PHASE 1
Mississauga, Ontario

Residential/Mixed Use: 50-150 Residents and Jobs/Hectare

RELEVANT GROWTH PLAN POLICIES

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Policies 2.2.5.1 and .2: Plan major transit station areas to achieve increased and transit-supportive densities; mixed residential, commercial, and employment uses; access to transit facilities from a range of transportation modes; and accommodation of local services, including recreational, cultural, and entertainment uses.

Policy 2.2.7* a, b, c, d: Plan and design designated greenfield areas to contribute to complete communities; create street configurations and densities and urban form that support walking, cycling, and transit; provide a diverse mix of land uses to support vibrant neighbourhoods; and create high quality open space with urban design standards that support transit, walking, and cycling.

*Although not in a designated greenfield area, the Village’s traditional, village-like character makes it a potential model for some designated greenfield areas.

PROJECT OVERVIEW

Port Credit Village Phase 1 (the Village) is a brownfield redevelopment that enhances an established main street. The new development is within walking distance of a commuter rail station and features compact, pedestrian-oriented, mixed-use development.

The Village development is in Port Credit, a community of over 10,000 residents, within the City of Mississauga. The Port Credit community is considered Mississauga’s “Village on the Lake” with a mix of shops and services, low-rise houses and high-rise rental and condominium apartment buildings. The Village development occupies 10.5 ha (26 ac) of Port Credit and is the first phase of a larger development to redevelop the area.

The Village is built on the former St. Lawrence Starch Company lands, which was an industrial area. The site’s redevelopment re-established...
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a connection between the previously divided east and west parts of Port Credit and opened up public access to the waterfront.¹

The neighbourhoods surrounding the Village are part of an older urban street grid system and have been the focus of intensification for the City of Mississauga since the 1950s.² The Village is bordered to the east by single, detached, low-rise housing and to the west by high-rise rental and condominium apartment buildings.

The Village has higher densities than the surrounding neighbourhoods, accommodated in a pedestrian-oriented neighbourhood structure. It consists of 410 residential condominium units: 225 apartments in three mid-rise buildings, 167 townhouses and 18 live/work units. Completing the development is 1,400 m² (15,000 ft²) of office space and 3,700 m² (40,000 ft²) of commercial/retail uses.³

PLANNING CONTEXT

When the project’s developers, FRAM Building Group and Slokker Canada (FRAM/Slokker), purchased the property in 1998, the majority of the brick industrial buildings comprising the original factory had been demolished. As well, the site came with a 1997 Ontario Municipal Board (OMB) ruling on built form, density and building heights, which was the result of local residents and the City strongly opposing the previous land owners’ proposal for high-density and high-rise apartments. After a lengthy hearing, the OMB ruled that the property be developed with reduced densities and heights.

Due to the intense public interest in the project, FRAM/Slokker ensured that local residents were involved in the planning process by consulting the community through several workshops, open houses, and public meetings.⁴

FRAM/Slokker and the City worked together to ensure that the development was compatible with the existing urban fabric and suitable for the City’s vision for redeveloping the waterfront.

A final plan was developed, supported by the community and the City, and presented to the OMB in 2000. Construction began in 2001. Although the Village was completed in 2005, FRAM/Slokker continue their involvement in the community by programming events throughout the development.

TRANSPORTATION AND TRANSIT

The developers’ decision to purchase the property was influenced by the site’s proximity to an existing GO Train Station (regional transit service). The station is a convenient five- to ten-minute walk from the Village. The Village is 385 m (1,148 ft) at its closest and 850 m (2,788 ft) at its furthest point from the GO Station. There is also a major bus

² Ibid.
³ Ibid.
⁴ Ibid.
terminal for Mississauga Transit (local transit service) at the GO Station, and four bus routes are within a five-minute walk on Lakeshore Road East, a bordering street. The availability and proximity of transit allowed the developer to market higher densities and create a compact design, thus reducing dependence on cars.5

The street network is based on a modified grid pattern that connects with the urban fabric of the nearby neighbourhoods and makes it easy for pedestrians and vehicles to travel within the development.

The Village's waterfront promenade forms part of the Waterfront Trail, a 900-kilometre route that follows the shores of Lake Ontario and the St. Lawrence River, from Niagara-on-the-Lake to the Quebec border.

Parking in the development is largely underground. Townhouse parking is either in underground garages or behind each unit, with lane access. The three, six-storey apartment buildings have 596 underground parking spaces, and 70 surface parking spaces are available for the commercial and office uses. All apartment buildings and townhouses have indoor bicycle spaces.6

PUBLIC REALM AND BUILT FORM

The Village's design is structured around the pedestrian. Pedestrians are directly connected via streets, parks, and the open space system to transit, the waterfront, and retail and commercial services on Lakeshore Road.

Reduced right-of-way standards were implemented by the developer and supported by the City to create a more pedestrian-friendly streetscape. The development includes public right-of-ways and a system of internal private streets. The private streets service the

5 Ibid.
6 Ibid.
St. Lawrence Park, which provides views and access to Lake Ontario. On Lakeshore Road, the Port Street Market piazza is surrounded by apartments, a restaurant, and retail spaces, creating a vibrant, active destination for the community and a well used public space. The Civic Square and the Mews are more passive open spaces that link the community to the waterfront and St. Lawrence Park.

The City required FRAM/Slokker to develop the waterfront as a public park, to reclaim the water’s edge and provide continuous public access along the waterfront. The developer financed the park at a cost of $1.2 million, with the City investing an additional $3.4 million. The waterfront was rehabilitated to include a 460 m (1500 ft) landscaped promenade and a 1.8 ha (4.4 ac) park. The City and the developer worked together to make St. Lawrence Park high quality, “recognizing that the site would be a regional destination, since it is one of the few areas in Mississauga that offers public access to the waterfront and the Waterfront Trail.”

There is a high level of consistency in the materials used and the treatment of the built form and public realm, which helps establish the Village’s character. However, a range of building types and architectural styles provides diversity and visual interest. Carefully detailed facades and subtle variations in massing, proportion, and material colour are features that set the Village apart from conventional development.

The brick and stone facades of the live/work units were designed to respect the typical small town scale of Port Credit’s existing main street. Likewise, the townhouses are brick, with articulated facades of front porches and balconies that are also reminiscent of a typical small town. The mid-rise apartment buildings are brick elevations as well, but

7 Ibid.
are accentuated by glass and large terraces to take advantage of the waterfront views.

The mix of contemporary and warehouse-inspired buildings, all with brick facades, is a reflection of the site’s industrial heritage and the former factory buildings' materials. FRAM/Slokker retained and restored the Administration Building of the former St. Lawrence Starch factory as office space to further recognize this heritage.

To blend into the existing neighbourhood, the Village’s buildings gradually transition in height from three-storey townhouse development in the east to six-storey, mid-rise apartment buildings in the west.
AWARDS

- Ontario Professional Planners Institute (OPPI), Excellence in Planning Awards, City of Mississauga and FRAM/Stokker, 2005
- Urban Design Award, City of Mississauga, 2005

WEBSITES

www.uli.org/sitecore/content/ULI2Home/AwardsAndCompetitions/AwardsForExcellenceProgram/2006/Port%20Credit%20Village.aspx
www.framhomes.com/port_credit_village.html

80 Port Street, mid-rise condominium apartments
HOLIDAY NEIGHBORHOOD
Boulder, Colorado

PROJECT DATA

Residents and Jobs Per Hectare 81
Ratio of Jobs to Residents 1:5
Gross Residential Density 30 units/ha (12 units/ac)
Site Area 10.9 ha (27 ac)
Land Use
Residential 162 market rate units
138 affordable units
Wild Sage Co-housing - 34 units
Commercial 5,413 m² (58,264 ft²)
Maximum Height 3 storeys
Transit local and regional bus service
Parking 1.1 parking spaces per unit
Date Completed 2008
Developers Boulder Housing Partners
Peak Properties, Affordable Housing Alliance
Coburn Development, Wolff/Lyon Architects
Wonderland Hill Development
Master Plan Barrett Studio Architects
Studio 2 Landscape Architects

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*Although not in a greenfield area, Holiday Neighborhood’s location and built form make it a potential model for some designated greenfield areas.

PROJECT OVERVIEW

The Holiday Neighborhood project has turned a greyfield site in Boulder, Colorado into a low-rise, mixed-use, residential community that is transit-supportive, energy efficient, and includes a substantial amount of affordable housing.

Located at the city’s northern limits, Holiday Neighborhood is surrounded by low-density, car-oriented, post-war residential, commercial, and industrial development. It is bordered by U.S.

Wild Sage Co-housing Common House
The community plan for Holiday Neighborhood centres on two interconnected goals: sustainability and affordability. Fortunately, the initiatives that increase affordability have coincided with sustainability practices. The planning goals were achieved through a clustered, mixed-use, mixed-income neighbourhood of two- to three-storey buildings that reduces energy consumption and encourages walking, biking and transit use.

One of the first principles of the community plan is to take advantage of Boulder's substantial existing bike and bus infrastructure. The City’s existing density zoning for the site was doubled to 50 units per hectare, which contributed to the neighbourhood’s transit-supportive densities and desired urban character. Higher densities also addressed affordability - a major challenge facing the City of Boulder - by allowing for smaller homes. The project offers a range of housing types, including single detached, townhouse, studio mews, live/work, lofts, duplexes, triplexes, and apartments.

A mix of land uses was essential to achieve the community plan’s walkability and community integration objectives. Initially, the City of Boulder was reluctant to allow retail spaces in Holiday Neighborhood. However, growing traffic congestion prompted the City to allow nearly 40 retail spaces to mitigate traffic outflow from the new neighbourhood by bringing services closer to where people live. The commercial buildings create a focus and retail centre on Broadway Street for the surrounding community. Holiday Neighborhood also includes a cluster of live/work studios along the site’s main pedestrian route, allowing people to watch artists and craftspeople at work.

PLANNING HISTORY AND CONTEXT

Holiday Neighborhood was developed under the direction of the City of Boulder, which has a population of 103,000. Boulder has been implementing growth management policies since 1976, beginning with the “Danish Plan”, which limited residential growth to a maximum of two per cent a year. The Boulder Valley Comprehensive Plan, adopted in 1977 and last updated in 2008, directs growth into the existing urban area, promotes compact walkable communities, and protects the open space and rural lands surrounding the city.

The city’s natural setting greatly contributes to its livability. Boulder’s open spaces at the foothills of the Rockies, extensive parks system, comprehensive bicycle network, and compact walkable neighbourhoods all contribute to the city's desirability. However, there is a limited housing supply and prices are high - the median price for a single-family home in Boulder was USD $450,000 in 2004. In response, the City has made affordable housing a long-term priority. It aims to provide access to housing to both low- and moderate-income households (those earning less than or equal to 60 per cent of the area median income).


2 Ibid.

The idea to develop Holiday Neighborhood was conceived after the Holiday Twin Screen Drive-In Theater closed in 1989 and the land was annexed from Boulder County by the City of Boulder, along with many surrounding parcels outside the city’s northern limits. Initially, the site’s private landowners intended to build a “big-box” retail outlet. The City, however, was developing a sub-community visioning plan process for north Boulder that contrasted strongly with the landowners’ proposal. The City’s vision emphasized integrated, mixed-use, mixed-income communities with a New Urbanist character and development patterns that were more consistent with Boulder’s urban neighbourhoods.

The City wanted to purchase the site from the private landowners to have greater certainty over its development and to prevent the “big-box” proposal from being realized. Despite opposition, city council approved the City’s purchase of the property in 1997. In 1998, realizing that the City itself should not function as a developer, it sold the land to Boulder Housing Partners, an arm’s-length public entity and the largest landlord in the city. Boulder Housing Partners has a long history of developing affordable housing, so it could easily meet the City’s requirement of making 40 per cent of the project’s units permanently affordable.

To provide visual diversity to the project’s streetscapes, Boulder Housing Partners hired five other developer/builders known for their innovative projects and experience with sustainability and affordability: Peak Properties, Affordable Housing Alliance, Coburn Development, Wonderland Hill Development, and Wolff/Lyon Architects.

**TRANSPORTATION AND TRANSIT**

Holiday Neighborhood is served by one regional and two local bus routes within a five-minute walk. Emphasizing a strong commitment to transit, Boulder Housing Partners provides a complimentary bus pass to each resident. Overall, residents have responded extremely positively to the combined convenience of access to transit and local stores and services.

Holiday Neighborhood extends the city’s street network and existing residential fabric northward. The neighbourhood’s street system is a connected and permeable modified grid, providing many direct connections into and within the development, in contrast to the disconnected circuitous streets of the surrounding community. This permeability reduces the need for cars by offering residents easy access to neighbourhood stores, existing transit routes, and Boulder’s extensive bicycle trail system. For example, Holiday Neighborhood’s bike path along Highway 36 connects directly to the city’s bike trail system.

Vehicle dependency is further reduced through Holiday Neighborhood’s participation in the eGO CarShare program, a non-profit serving the

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5 Ibid.

Boulder-Denver Metro area. The program is pay-as-you-drive and provides the convenience of a car without the costs of ownership.

The decrease in car dependence allowed the developers to successfully apply for a variance to the parking requirement for the Wild Sage Co-housing development, a 34-unit townhouse project within Holiday Neighborhood that cooperatively shares and operates its common areas. The Wild Sage project was required to supply only 1.1 parking spaces per housing unit, as opposed to the City’s standard of two spaces per unit. Additional communal green space was created as a result of reduced parking requirements.

Parking throughout Holiday Neighborhood is provided on the street and in small shared surface lots behind buildings.

PUBLIC REALM AND BUILT FORM

The Holiday Drive-In Redevelopment Standards and Guidelines, developed by Barrett Studio Architects, provide direction on siting and massing, parking, lighting, landscape, architectural elements, and materials for each type of housing. The document also contains guiding principles on:

- Evoking a “sense of time and place” by responding thoughtfully to climatic conditions; celebrating and highlighting the site’s natural stormwater drainage patterns; using simple forms, patterns, and materials and clear structure; and creating an architectural expression representing the contemporary time and place.

- Creating “diverse connections” through the community using uninterrupted green spaces and visual corridors that connect to the central pedestrian spine; and making the neighbourhood accessible to people of all ages and mobility levels, cyclists, and public transit users.

- Making the community “human-scale” by using smaller material modules with attention to detail in outdoor spaces and buildings; creating variety in building uses, geometry, massing, texture and colour; creating building forms and facades that are responsive to the street; and incorporating landscaping, balconies and rooftop gardens.

Reduced building setbacks allowed many smaller lots with diverse purposes to be closer to the street. In conjunction with higher densities, retail amenities, and mixed-uses, the reduced setbacks contribute to a pedestrian-oriented environment, and provide for more live-work options.

Holiday Neighborhood’s narrow tree-lined streets are pedestrian friendly. On-street parking creates a buffer between the sidewalk and the street, and curb bump-outs at intersections shorten pedestrian crossings.


8 Holiday Drive In Redevelopment Standards and Guidelines, Barrett Studio Architects, Housing Authority for the City of Boulder, September 2001.
The neighborhood's open space system provides links and pathways throughout the development and to the surrounding community. A pedestrian spine extends from Broadway Street, through the central, 0.8 ha (2 ac) community park, to an orchard and bike trail along Highway 36. The orchard and a large community garden provide fresh fruits and vegetables for residents.

Architectural expression in Holiday Neighborhood consists of a collection of contemporary, farmhouse-inspired, and Victorian-era styles. Distinct colour palettes of red, yellow and green harmonize these diverse styles, which are further unified by front porches and units that address the streets and walkways. Commercial brick buildings are reminiscent of those found on a small-town main street.

**ENERGY AND ENVIRONMENTAL SUSTAINABILITY**

To obtain building permits, developers and architects were required to meet environmental sustainability criteria set out in the City's Green Points Program. The development team went a step further and established Green Guidelines for the Holiday Neighborhood that "challenged project designers to use innovative, efficient designs and technologies that were also sufficiently cost-effective to turn a profit in a project focused on affordability."9

A grant the Sustainable Futures Society received from the Environmental Protection Agency to 'green' Holiday Neighborhood helped achieve this goal. The Sustainable Futures Society, a Denver-based, non-profit organization dedicated to promoting sustainable development, directed the grant money to project designers to research and explore design elements that would “increase project sustainability and demonstrate tangible air and water quality benefits.”10

Individual buildings in Holiday Neighborhood were built with some of the most extensive energy efficiency features to date. Solar water heating systems, passive solar orientation, and extra insulation in homes have significantly reduced all forms of energy consumption and servicing.

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10 Ibid.
costs. The higher initial costs associated with the construction of high-efficiency homes were offset through a partnership with one of the project developers, Affordable Housing Alliance, as well as Habitat for Humanity. Under this plan, homeowners contributed sweat equity (their own labour) to the construction of their homes.

The Wild Sage Co-housing development received an Environmental Protection Agency energy rating of 5 Star Plus - the highest possible rating - on all of its 34 homes. This rating is the result of the co-housing development’s many sustainable features, including recycled and low-toxicity materials, concrete floors, light-coloured, flat roofs to reduce heat island effect, cluster development, solar panels, passive solar orientation, and lowered parking standards.

Innovative stormwater management strategies, or low-impact development practices, were used to deal with the neighbourhood’s surface run-off. The community park has sand filter beds that remove pollutants by infiltration and microbial decomposition.11 This system allows the park to be used for both recreation and water treatment. The Affordable Housing Alliance site also used low-impact development practices, such as planted swales to capture and channel stormwater from rooftops.

AWARDS

• PLAN Boulder County Award for urban design excellence, 2005
• Colorado National Association of Housing and Redevelopment Officials Award, Boulder Housing Partners, 2005

11 Ibid.

WEBSITES

www.holidayneighborhood.com
www.boulderhousing.org/content/recent-development-holiday-neighborhood
www.terrain.org/articles/16/wann.htm
www.wildsagecohousing.org
www.barrettsstudio.com/holiday_neighborhood.htm
www.coburndevelopment.com/projects/17
GARRISON WOODS
Calgary, Alberta

Relevant Growth Plan Policies

Policy 2.2.3.7 (b, c, d, e, f): Plan and design intensification areas to provide a diverse mix of land uses to support vibrant neighbourhoods; provide high quality public open spaces with urban design standards that create attractive and vibrant places; support transit, walking and cycling; and achieve higher densities than the surrounding area, with an appropriate transition of built form to adjacent areas.

Policy 2.2.7* a, b, c, d: Plan and design designated greenfield areas to contribute to complete communities; create street configurations and densities and urban form that support walking, cycling, and transit; provide a diverse mix of land uses to support vibrant neighbourhoods; and create high quality open space with urban design standards that support transit, walking, and cycling.

* Although not in a greenfield area, Garrison Woods’ location and urban form make it a potential model for some designated greenfield areas.

Project Overview

Garrison Woods has transformed a greyfield site into a compact, pedestrian-oriented, mixed-use, residential community, with a strongly articulated public open space system.

Garrison Woods was formerly the eastern part of the Canadian Forces Base (CFB) in Calgary, Alberta. The CFB Calgary Lands are 184 ha (455 ac) and consist of three sites: Garrison Woods, Garrison Green...
and Currie Barracks. The 71 ha (176 ac) Garrison Woods site was the first of the three to be redeveloped by the Canada Lands Company, a federal Crown corporation.

Garrison Woods is in the southwest sector of Calgary, on the east side of the Crowchild Trail expressway and south of the Marda Loop, a shopping district with over 140 merchants. The site is surrounded by a grid network of streets containing post-war, lower density residential neighbourhoods: Altadore, Richmond, South Calgary, and North Glenmore Park.

Garrison Woods has 1,600 residential units ranging from condominium apartments to single family homes, with many of the former military buildings reused as community amenities. The neighbourhood has the character of a traditional village, with maximum building heights of four storeys. It uses narrower streets, mixed uses and diverse housing types to achieve an overall gross residential density of almost 25 units per hectare and approximately 64 residents and jobs per hectare. Four hundred of the 565 existing houses from the military base were refurbished off-site and returned to the development.

To capitalize on the neighbouring Marda Loop shopping district at the site’s north edge, retail uses and higher residential densities are concentrated in Garrison Gate, at the northern end of Garrison Woods. Garrison Gate includes local stores and services, some of which have residential units above. For major shopping needs, a large grocery store on the site’s northwest corner is within a 10-minute walk of almost all residences.

PLANNING CONTEXT

The City of Calgary developed the 1998 CFB East Community Plan to meet many of the goals and principles of its 1995 Sustainable Suburbs Study. The Sustainable Suburbs Study encourages developing suburban communities that are attractive and livable in a way that is sensitive to the environment and reduces automobile dependency. The CFB East Community Plan proposed compact form, community centres and neighbourhood nodes, a diversity of housing types, a connected open space system, and an emphasis on walking, cycling and transit.

The City and the Canada Lands Company worked together early in the planning process to ensure that a development of this size would be successful from a public and private perspective. The public engagement process took 17 months and was the largest the City had ever conducted. As a result, there was very little opposition to the development. Since the municipal development plan for Calgary


encourages intensification in older neighbourhoods, the project easily conformed to plans for the district.³

**TRANSPORTATION AND TRANSIT**

Garrison Woods is well served by bus transit. Five bus routes, including a downtown express, are within a five-minute walk, located on two bordering streets (20 Street SW and Crowchild Trail) and on nearby 50 Avenue SW.

Garrison Woods maintained much of the street grid system from the original site plan for the former CFB community, which was laid out in 1948 for military housing and based on the Garden City of Radburn, New Jersey.⁴ The new modified grid promotes connectivity within the development and to surrounding neighbourhoods. Combined with the pedestrian network, the modified grid promotes walking, bicycling, and transit use by slowing traffic, minimizing vehicle short cutting, and providing direct pedestrian and bicycle access to transit and local services.

**PUBLIC REALM AND BUILT FORM**

The developers introduced features to increase pedestrian comfort and create a more attractive environment, including narrower streets, rear lanes, on-street parking, a 35 km/h speed limit, and reduced setbacks to bring buildings closer to the street.

The site’s extensive open space system and trail network creates a variety of high-quality public spaces that are integrated with the street system to encourage walking and reduce reliance on cars. Eight per cent of the land is dedicated to park space, ranging from plazas and parkettes to a large neighbourhood park. Most homes are within a two-minute walk of a park.⁵

In addition to reusing existing buildings, the Canada Lands Corporation used the open space system to protect and commemorate the site’s cultural and landscape heritage. A sculpture in Garrison Square and engraved markers throughout the park and trail system are reminders of the area’s history as a Canadian Forces base. Many of the existing mature trees were saved by designing the streets and blocks around them, relocating them, and providing extensive maintenance measures and setbacks to help ensure their viability and lifespan.⁶

*Garrison Woods Architectural Codes*, by Jenkins and Associates, promoted quality development by providing style based architectural guidelines for building form, proportion, materials, and colours, based on four architectural styles: Tudor, Colonial, Craftsman and Victorian.⁷

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⁶ Ibid.

⁷ Ibid.
With various property developers building housing in Garrison Woods, the codes allowed for a mix of housing styles and types while ensuring a coordinated theme for the community.

AWARDS

- Canadian Home Builders’ Association - Calgary Region, Best Community
- Canadian Home Builders’ Association - Calgary Region, Best Innovation
- Alberta Association of Canadian Institute of Planners, Award of Excellence - Environmental Design
- Real Property Institute of Canada, Comprehensive Planning Award
- Real Property Institute of Canada, Best Practices Award
- Alberta Association of Canadian Institute of Planners, Award of Merit
- Canadian Institute of Planners, Honour Award for Planning Excellence
- Canadian Home Builders’ Association, Grand SAM Award

WEBSITES

www.garrisonwoods.com
www.clc.ca/success-story/garrison-square
www.cabe.org.uk/case-studies/garrison-woods
www.mardaloopbrz.com

**TECHNOLOGY SQUARE**
Cambridge, Massachusetts

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### RELEVANT GROWTH PLAN POLICIES

**Policies 2.2.6.4 and .10:** Locate major office in areas with existing frequent transit service and plan employment lands to have transit-supportive, compact built form and minimize surface parking.

**Policies 2.2.5.1* and .2:** Plan major transit station areas to achieve increased and transit-supportive densities; mixed residential, commercial, and employment uses; access to transit facilities from a range of transportation modes; and accommodation of local services, including recreational, cultural, and entertainment uses.

**Policy 2.2.3.7 (b, c, d, e, f):** Plan and design intensification areas to provide a diverse mix of land uses to support vibrant neighbourhoods; provide high quality public open spaces with urban design standards that create attractive and vibrant places; support transit, walking and cycling; and achieve higher densities than the surrounding area, with an appropriate transition of built form to adjacent areas.

* Technology Square is located in a major transit station area (Kendall subway station, Massachusetts Bay Transit Authority).

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### PROJECT OVERVIEW

Technology Square is a recent intensification and renovation of a 50-year-old office development, transforming it into a transit-supportive, pedestrian-friendly, office and mixed-use employment area in Cambridge, Massachusetts.

The square is between Broadway and Main Street, in a university neighbourhood known as a technology and life sciences cluster, north of the Massachusetts Institute of Technology’s (MIT) main campus. Also in the cluster, north of site, is One Kendall Square, a nine-building campus of mixed-use development that houses life science and technology tenants. To the west of Technology Square is a residential neighbourhood of low-rise apartments and single-family housing.

First built in the 1960s, Technology Square originally consisted of isolated office towers surrounded by lawns and parking lots. The development’s most recent revitalization, completed in 2002, included

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### PROJECT DATA

- **Jobs Per Hectare:** 1,114
- **Ratio of Jobs to Residents:** no residential component
- **Site Area:** 4.05 ha (10 ac)
- **Land Use:** Office, laboratory, retail
- **Maximum Height:** 10 storeys
- **Transit:** subway, local bus service and private shuttle bus service
- **Parking:** parking structure - 1,593 spaces
- **Date Completed:** 2002, Ongoing Refurbishment
- **Developers:**
  - Massachusetts Institute of Technology
  - City of Cambridge Redevelopment Authority
  - Cabot Cabot & Forbes

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renovating aging buildings as well as adding four new infill buildings, a central green space, commercial and service retail uses at grade, and connections to surrounding neighbourhoods. These improvements transformed the complex and provided amenities and services for people who work on site and those living and working in the surrounding neighbourhood.¹

Today, Technology Square is a high density cluster of seven buildings with a combined gross floor space of 105,506 m² (1,136,734 ft²) on a 4.05 ha (10 ac) site.² Approximately 3,400 m² (37,000 ft²) of retail uses, including restaurants, convenience stores, banks, and fitness clubs, are located on the ground floors of Buildings 200, 500 and 600.

PLANNING HISTORY AND CONTEXT

In the 1950s, after the closing of the Lux Flakes soap factory, the City of Cambridge requested help from MIT to redevelop the parcel of land, which had become dilapidated.³ The result was a partnership among then-MIT President James Killian, the City’s Redevelopment Authority, and real estate developer Cabot Cabot & Forbes to plan and finance Technology Square on the factory site. The project was one of the earliest American business parks tied to a university, and perhaps the first partnership between civic and academic interests to redevelop an urban industrial zone.⁴

While MIT has maintained tenancy within Technology Square since its development, the complex’s ownership has changed a number of times over its history. In 1973, MIT sold its interest to the real estate development firm, Cabot Cabot & Forbes. In 1998, Beacon Capital Partners became the owners and the site’s most recent redevelopment was initiated, including the addition of four new buildings.

MIT reacquired the complex of seven buildings in 2001 and repurposed it as a life sciences campus, combining laboratories, research and development space, office space, and some at-grade retail uses to accommodate the area’s expanding life sciences industry.⁵ While MIT retains the ground lease, in 2006 the buildings were sold to Alexandria Real Estate Equities Inc., which now manages the properties.

TRANSPORTATION AND TRANSIT

Technology Square is well-served by the Massachusetts Bay Transportation Authority - Kendall subway station is within a five- to ten-

minute walk (500 m / 1640 ft) and eight local bus routes are also within walking distance. One route is on a bordering street (Main Street), three routes are less than a five-minute walk to the north, and four routes are within a ten-minute walk to the south. In addition, the Charles River Transportation Management Association provides a rush-hour, private shuttle bus service on site that connects to Boston’s North Station (subway and commuter rail).

The site is easy to access on foot, with paved pedestrian areas between each building connecting to surrounding streets on three sides.

Dedicated bicycle lanes along three bordering streets - Main Street, Broadway and Galileo Galilei Way - provide excellent access to the site for cyclists.

Paging is provided in a parking garage at the northwest corner of the site.

PUBLIC REALM AND BUILT FORM

Most of the buildings are organized in a grid pattern, with their narrow ends addressing a central pedestrian spine to the north and Main Street to the south. This configuration allows for multiple building frontages and pedestrian access points.

A central landscaped quadrangle, fronting on Main Street, is a green focal point and gathering space among the paved pedestrian areas that surround the buildings. The quadrangle is approximately ten per cent of the site, the size of one of the surrounding building footprints.

The site’s seven office buildings range in height from five to ten storeys and vary in style. For example, the three renovated, 1960s buildings are ten-storey, concrete, international-style blocks on top of low concrete podiums, with building entrances and ground floor windows raised above the street level. In contrast, the four new buildings are five- to eight-storey glass, steel, and concrete structures that are much more pedestrian-friendly, with entrances and windows at grade.

The new buildings on the site’s west side (600 and 700 Technology Square) step down from five to three storeys to meet the height of the residential neighbourhood across Portland Street. With its Main Street storefronts opening onto the sidewalk, 600 Technology Square also provides a transition from office to neighbourhood commercial uses and anchors the corner of Main and Portland Streets. On the site’s east side, the new eight-storey building (100 Technology Square) matches the heights of the office buildings across Galileo Galilei Boulevard.

Technology Square’s parking facilities include part of an existing six-storey parkade shared with the adjacent Charles Stark Draper Laboratory, along with a new four-storey addition. The existing conventional concrete parkade is set back from the street. The new addition is close to the sidewalk and steps down to three storeys where
it faces the residential neighbourhood on Portland Street. Its metal screen facade allows partial views from the sidewalk into the garage while still framing the street edge and screening the cars.

**ENERGY AND ENVIRONMENTAL SUSTAINABILITY**

200 Technology Square, an Alexandria Real Estate Equities building, was recently certified Leadership in Energy and Environmental Design (LEED) Gold by the U.S. Green Building Council for its Core and Shell conversion. Core and shell encompasses base building elements such as structure, envelope and the heating, ventilation, and air conditioning system.

**BUILDING INVENTORY**

100 Technology Square
Property Type: Laboratory
Year Built: 2001-2002
Rentable Square Feet: 255,441
Eight storeys

200 Technology Square
Property Type: Office
Year Built: 1962
Major Renovation Year: 2005
Rentable Square Feet: 155,250
Ten storeys

300 Technology Square
Property Type: Laboratory
Year Built: 2001
Rentable Square Feet: 175,609
Eight storeys

400 Technology Square
Property Type: Office
Year Built: 1967
Major Renovation Year: 1999
Rentable Square Feet: 194,776
Ten storeys

500 Technology Square
Property Type: Laboratory
Year Built: 1965
Major Renovation Year: 2002
Rentable Square Feet: 178,664
Ten storeys

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### 600 Technology Square
- **Property Type:** Office
- **Year Built:** 2001
- **New Construction:**
- **Rentable Square Feet:** 127,150
- **Five storeys**

### 700 Technology Square
- **Property Type:** Office
- **Year Built:** 2001
- **New Construction:**
- **Rentable Square Feet:** 48,930
- **Five storeys**

**WEBSITES**
- [www.tech-square.com](http://www.tech-square.com)
Employment Lands

TECHNOPÔLE ANGUS
Montreal, Quebec

Location: Avenue du Mont-Royal, Rue Rachel, Rue André-Laurendeau, and the Canadian Pacific Railway

RELEVANT GROWTH PLAN POLICIES

Policies 2.2.6.4 and .10: Locate major office in areas with existing frequent transit service and plan employment lands to have transit-supportive, compact built form and minimize surface parking.

Policy 2.2.3.7 (b, c, d, e, f): Plan and design intensification areas to provide a diverse mix of land uses to support vibrant neighbourhoods; provide high quality public open spaces with urban design standards that create attractive and vibrant places; support transit, walking and cycling; and achieve higher densities than the surrounding area, with an appropriate transition of built form to adjacent areas.

PROJECT OVERVIEW

Technopôle Angus is a transformed brownfield site that has become a pedestrian- and transit-friendly urban business park. The redevelopment includes significant environmental sustainability features and adaptive reuse of an historic industrial building. The project is partially completed and is expected to be finalized in 2018.

Technopôle Angus is in the southeast corner of the Rosemont district, in east Montreal. The Rosemont district is primarily a residential neighbourhood consisting of two- to three-storey apartment buildings, duplexes, and triplexes typical of Montreal.

PROJECT DATA

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<tr>
<th>Jobs Per Hectare</th>
<th>60 (125 total at completion)</th>
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<tbody>
<tr>
<td>Ratio of Jobs to Residents</td>
<td>no residential component</td>
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<tr>
<td>Site Area</td>
<td>20± ha (49± ac)</td>
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<tr>
<td>Land Use</td>
<td>Employment</td>
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<tr>
<td></td>
<td>57,631 m² (620,335 ft²)</td>
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<tr>
<td></td>
<td>total at completion: 237,609 m² (2,557,607 ft²)</td>
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<tr>
<td></td>
<td>1200 employees (2500 total at completion)</td>
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<td>Maximum Height</td>
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<tr>
<td>Transit</td>
<td>subway and local bus service</td>
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<td>Parking</td>
<td>399 surface (654 total at completion)</td>
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<td></td>
<td>60 underground (1580 total at completion)</td>
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<td>82 indoor bicycle</td>
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<td>Developer</td>
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<tr>
<td>Master Plan</td>
<td>Groupe Gauthier, Biancamano, Bolduc</td>
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</table>
The Technopôle Angus site is approximately 20 ha (49 ac) and will include 237,609 m² (over 2.5 million ft²) of space for commercial, office and light industrial uses once complete. As of May 2009, 57,631 m² (0.6 million ft²) of employment space was complete and 1200 people were employed on site. It is home to 46 companies from a variety of industries, including cinema, television, multimedia, design, distribution, environmental, information technology, life sciences, and retail.

Technopôle Angus is part of a larger, long-term redevelopment of the former Canadian Pacific Railway (CPR) Angus Shops into a mixed-use neighbourhood. The most recent phase of the project includes Technopôle Angus and approximately 1,200 medium density residential units.1 This phase locates employment, residential and neighbourhood-scale commercial uses within a ten-minute walk of each other and integrates them into a single community.

PLANNING HISTORY AND CONTEXT

The Angus Shops opened in 1902 as CPR’s maintenance facility. Working-class neighbourhoods developed around the shops to house its employees. CPR began decommissioning the Angus Shops in the 1970s and finished in 1992, when all operations ceased.

The closure of the Angus Shops had a significant impact on the Rosemont district and its residents. Between 1976 and 1986 the district’s population dropped 14 per cent, due to the loss of local employment opportunities.2 By 1994, the Rosemont district had a 20 per cent unemployment rate.3

Redevelopment of the Angus lands has occurred in two major stages since the 1980s. Phase 1 began in 1984 and was northeast of Boulevard Saint-Michel. Phase 2 began in 1998 and is southwest of Boulevard Saint-Michel; it includes the Technopôle Angus site.

CPR originally proposed a commercial and residential project on the Phase 1 site, but local merchants strongly opposed the commercial uses and community organizations demanded social housing. In response, the City of Montreal and the government of Quebec created a non-profit development corporation, the Société des terrains Angus (SOTAN), to develop the site for a mix of market and social housing. SOTAN purchased the land from CPR and sold it to both for-profit and non-profit developers. It also prepared a development plan, consulted

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2 Ibid.

the public, and obtained municipal and provincial approvals. Phase 1 took 10 years to complete and created 2,587 residential units, 40 per cent of which were reserved for moderate- and low-income households.4

Phase 2 of the Angus Shops redevelopment is 50.6 ha (125 ac) and when complete will include a mix of medium density residential units and commercial and light industrial uses.5

In the mid 1990s, due to growing unemployment in the Rosemont District, the Rosemont–La Petite-Patrie borough Community Economic Development Corporation (CDEC) proposed to provide jobs for local residents by retaining over half of the Phase 2 Angus lands as a designated industrial area.6 The City and the local population strongly supported this proposal, so in 1995, CDEC established a non-profit development corporation, Société de développement Angus (SDA) to “represent the employment needs of area residents, providing a link between decision-makers and the public.”7 SDA was responsible for purchasing the land from CPR and developing Technopôle Angus, which is the business park component of Phase 2.

That same year, the City and CPR signed a development agreement clarifying responsibilities for the Phase 2 Angus lands and making SOTAN and CPR responsible for developing the residential portion of the site.8

TRANSPORTATION AND TRANSIT

The development strategy for Technopôle Angus emphasizes sustainable transportation. Consequently, the business park has implemented a Sustainable Transport Plan (2006) to support opportunities for public transportation, carpooling, car-sharing, cycling and walking.9

Key sustainable transportation features of Technopôle Angus include:

- Close proximity and accessibility to the Prefontaine Metro station (subway), which is a ten-minute walk from the business park;
- Two local bus routes on two internal streets (Rue William Tremblay and Rue Molson) and two bordering streets (Rue...
André-Laurendeau and Rue Rachel) within a five-minute walk of every building. Four other local bus routes on nearby surrounding streets are within a ten-minute walk.

- A carpooling initiative facilitated by a software program called Allégo, which matches and connects individuals working in the business park who are interested in carpooling;
- A car-share program, operated by Communauto, which has four permanent vehicles available on site;
- A parking strategy to reduce parking demand by supporting alternative modes of transportation, thereby eliminating large parking areas characteristic of conventional industrial parks;
- A bike-share program within the business park that provides nine bicycles for employees/tenants to use during the week at no cost; and
- Reduced speed limits of 40 km/h (25 mph), and a narrower right-of-way of 15 m (49 ft) on secondary streets to make them safer and more comfortable for pedestrians.

PUBLIC REALM AND BUILT FORM

The 2006 Technopôle Angus Plan Directeur (master plan) by Groupe Gauthier, Biancamano, Bolduc and SDA, provides principles and guidelines on sustainable development, architectural expression, transportation systems, and open space. An updated master plan is expected to be released in 2010.

As a former rail yard, the Technopôle Angus site lacked an internal street network. The new street grid is permeable and connected to the surrounding neighbourhoods. Blocks are subdivided by pedestrian routes. Pedestrian-friendly, continuous street edges are defined by locating buildings close to the street, set back no more than 4.5 m (15 ft) from the property line. Buildings are right next to the sidewalk and all pedestrian entrances to buildings are from the street, not parking lots. Parking and service areas are behind the buildings or underground.

Technopôle Angus has a significant amount of open space - 4.1 ha (10.12 ac) of parks and squares linked together by tree-lined streets and walks. Angus Square is a 0.4 ha (1 ac) urban square in the heart of Technopôle Angus, on a mid-block pedestrian spine that links to Parc Jean-Duceppe to the north and to a greenway that runs along the CPR line.

The 2.5 ha (6.3 ac) Parc Jean-Duceppe acts as a buffer between the Angus residential areas and Technopôle Angus. It is bordered by public streets on all four sides and offers picnic tables; fountains; tennis, beach volleyball, and pétanque courts; play areas; and free wireless internet access.

The streets that run north-south through the business park end at open spaces that connect to the greenway along the CPR line and provide views of Mont Royal. To encourage employees to use the park and the bicycle path on Rue Rachel, sporting equipment and bikes are available to use, free of charge.

The Plan Directeur calls for contemporary, high-quality architecture and buildings to be a minimum of two storeys and a maximum of four storeys to fit into the surrounding neighbourhood. Light, transparent facades are preferred, particularly at ground level.10

ENERGY AND ENVIRONMENTAL SUSTAINABILITY

Technopôle Angus markets itself as a modern urban business park, with development driven by green building and environmental sustainability. The park is also one of 23 Canadian projects participating in the Leadership in Energy and Environmental Design for Neighbourhood Development (LEED-ND) pilot program. The development has attained a current Certification Status of Stage 1, Gold, (an optional, anticipatory rating that predates project completion).11

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The SDA has also committed to constructing only LEED-certified buildings on the site. Buildings have been designed to meet the highest environmental and energy standards through LEED certification and the Building Owners and Managers Association (BOMA) Go Green Program. Some of the key environmental design aspects include:

- Integration of green building technologies designed to reduce energy and potable water consumption;
- Use of building systems designed to reduce greenhouse gas emissions and improve indoor/outdoor air quality; and
- Use of sustainable construction materials.

Built in 2006, 4100 Rue Molson is a four-storey, 4,552m² (49,000 ft²) building that is Quebec’s first multi-tenant LEED building. The 5,574m² (60,000 ft²) 4400 Rue Molson office building will also be LEED certified and is expected to be complete in 2009 / 2010.

The original century-old Locoshop Angus building has been adapted and reused as part of the redevelopment strategy. The 12,450m² (134,000 ft²) building was converted to light industrial uses in 1998. Its structure was retained and 85 per cent of its existing building materials were reused. For example, concrete slabs and bricks were crushed for walkways and vehicular paths.
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PUBLIC PARTNERSHIPS AND FINANCING

The Angus Shops site was highly contaminated - decontamination costs reached $10 million. The Quebec Ministry of the Environment granted the CPR $3.3 million, through the Revi-sol (Urban Contaminated Sites Rehabilitation) Program, to assist with the clean-up.\textsuperscript{12}

In the 1995 development agreement between the City and CPR for Phase 2 of the project, CPR was made responsible for 33 per cent of the infrastructure costs, such as roads, sewers, lighting, water, and trees. The City paid the balance.\textsuperscript{13}

In financing terms, Technopôle Angus is notable for two reasons: 1) it is being developed and is managed by a non-profit organization (SDA), and 2) in 2004, SDA formed a partnership with a Montreal venture capital organization, Fondaction CSN for cooperation and employment. To date, Fondaction has invested $20 million in the Technopôle Angus business park.\textsuperscript{14}

BUILDING INVENTORY\textsuperscript{15}

\textbf{Locoshop Angus} - 100-year-old 12,450m\textsuperscript{2} (134,000 ft\textsuperscript{2}) building was converted in 1998.

\textbf{4101 Rue Molson} - High-tech four-storey, 7,060m\textsuperscript{2} (76,000 ft\textsuperscript{2}) class A building featuring office / office loft spaces.

\textbf{Centre des biotechnologies Angus I} - 8,733m\textsuperscript{2} (94,000 ft\textsuperscript{2}) building designated as category A and biosafety level 2.

\textbf{4800 Rue Molson} - 3,250m\textsuperscript{2} (35 000 ft\textsuperscript{2}) building built in 2004 to host call centres and distribution centres.


\textsuperscript{13} Ibid.


Carrefour de l’économie sociale Angus - 2,787 m² (30,000 ft²) building that offers practical services to the site’s workers, such as a workplace daycare centre and various food services.

Édifice Rachel-Angus - 3,809 m² (41,000 ft²), on three floors, built in 2005.

4100 Rue Molson - 4,552 m² (49,000 ft²), four-storey building is Quebec’s first multi-tenant LEED building. Built in 2006.

4400 Rue Molson - 5,574 m² (60,000 ft²), office building to be LEED certified, pre-leasing.

Maison du Phare - 1,394 m² (15,000 ft²) life science building, respite services for parents and palliative care for children. Built in 2006.

WEBSITES

www.technopoleangus.com
ROSSLYN-BALLSTON METRO CORRIDOR
Arlington, Virginia

PROJECT DATA
Residents and Jobs Per Hectare 397
Ratio of Jobs to Residents 1:0.6
Gross Residential Density 70 units/ha (28 units/ac)
Site Area 414 ha (1023 ac)
Station Areas (approx. 400-1000 m radius from station entrance)
  Rosslyn - 95 ha (236 ac)
  Court House - 80 ha (198 ac)
  Clarendon - 69 ha (171 ac)
  Virginia Square-GMU - 58 ha (143 ac)
  Ballston-MU - 111 ha (275 ac)
Land Use
  Residential 29,114 units
  Office 2 million m² (21.9 million ft²)
  Retail 277,452 m² (3 million ft²)
  Hotel 270,703 m² (2.9 million ft²)
Transit subway with connecting regional and local bus service
Parking 56 garages and parking lots
  1,500 short- and long-term meters
20 carsharing parking spaces
Date Opened Metro Orange line completed 1979

RELEVANT GROWTH PLAN POLICIES
Policy 2.2.5: Plan major transit station areas and intensification corridors to achieve increased and transit-supportive densities; mixed residential, commercial, and employment uses; access to transit facilities from a range of transportation modes; and the accommodation of local services, including recreational, cultural, and entertainment uses.

Policy 2.2.3.7 (b, c, d, e, f): Plan and design intensification areas to provide a diverse mix of land uses to support vibrant neighbourhoods; provide high quality public open spaces with urban design standards that create attractive and vibrant places; support transit, walking and cycling; and achieve higher densities than the surrounding area, with an appropriate transition of built form to adjacent areas.

PROJECT OVERVIEW
The Rosslyn-Ballston Metro Corridor demonstrates the redevelopment and intensification of five subway station areas on an existing regional subway line in Arlington, Virginia. The formerly deteriorating, low-density commercial corridor has been transformed into a mixed-use corridor, focused around transit. Its design preserves the adjacent, stable, lower density residential neighbourhoods.

The corridor is 4.8 km (3 mi) long, running along Wilson Boulevard, Clarendon Boulevard, and Fairfax Drive, from the Rosslyn Metro station...
to Ballston-MU Metro station, along the Orange Line of the Washington Metropolitan Area Transit Authority Metro subway system.

The Rosslyn-Ballston corridor has a diverse mix of uses and transit-supportive densities. The area includes a range of residential unit types, affordable housing, compact development, employment opportunities, a variety of open spaces and a range of transportation choices. It is serviced by Metrobus, the Washington D.C. regional bus system; ART-Arlington Transit local bus service; and bike lanes along Clarendon and Wilson Boulevards and Fairfax Drive.

The success of transit-oriented development along the corridor and subsequent increase in transit ridership has been well-documented. Between 1991 and 2002, ridership along the corridor doubled. Now, approximately 50 percent of the corridor’s residents use the transit system to commute to work.¹

Between 1999 and 2002 alone, development along the corridor included the addition of 2,500 residential units, 140,000 m² (1.5 million ft²) of office space, 35,000 m² (379,000 ft²) of retail commercial space and 8 km (5 mi) of new bike lanes.²

The five Metro station areas range in size from about 57 to 111 ha (140 to 275 ac), and total 414 ha (1,023 ac). As of 2005, the station areas included approximately 5.44 million m² (58.6 million ft²) of development.³

PLANNING HISTORY AND CONTEXT

Planning for the Metro commuter rail system began in the 1970s. Recognizing the potential development benefits from a planned transit investment, Arlington County decided to situate the new rail line and its five stations beneath Wilson Boulevard and Fairfax Drive, expecting this area would successfully support growth. Commercial development already existed along Wilson, and the County wanted to further encourage office, retail, and higher density residential development close to the stations to revitalize the adjacent neighbourhoods, which had been declining since the 1960s. The Metro Orange Line opened in 1979.


Since the early 1980s, Arlington County, through its *General Land Use Plan* and corresponding sector plans for each Rosslyn-Ballston Corridor station area, has successfully used smart growth principles to generate residential, retail and recreational development. The intent of the *General Land Use Plan* and sector plans is to concentrate high density development within the Metro corridor while protecting and preserving adjacent, stable, lower density residential areas.

The *General Land Use Plan* and sector plans established distinct land use functions for each station area. For example, Rosslyn station focuses on intensive office and residential uses; Court House station, on governmental and institutional uses; Clarendon station, on restaurant and retail uses; Virginia Square-GMU station, on educational and institutional uses; and Ballston-MU station, on retail commercial uses.

While the sector plans for each station area are policy documents that envision and guide future development, they are not regulatory plans - the zoning ordinance is the regulating document. The sector plans only set goals for land use, open space, infrastructure, and urban design.

To ensure citizens and businesses could actively participate in development and policy decisions, the corridor planning process emphasized extensive public consultation and relied on community partnerships, such as the Ballston Partnership, Clarendon Alliance, and Rosslyn Renaissance. In addition, a comprehensive site-plan review,
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which includes public meetings with staff, citizens, county commissions, and developers, is required for proposed projects in the corridor to ensure they meet sector plan goals.10

The corridor’s success has made housing along it so desirable that keeping it affordable has become a significant challenge. In response, Arlington implemented an expanded density bonus provision, allowing up to 25 per cent more density to secure additional affordable housing units.11

STATION AREAS

Each station area sector plan focuses growth and intensification within an approximately 400 to 1000 m (0.25 - 0.6 mi) radius or a five- to 12-minute walk of the stations. The sector plans encourage walking, cycling and transit use. The station areas are planned as “urban villages” and emphasize pedestrian access and safety by incorporating a variety of public amenities and connections, including neighbourhood parks, parkettes, public art, wide sidewalks with restaurant seating, bike lanes, street trees, traffic calming elements and street-level retail.12

To ensure that new development fits in with and protects adjacent stable neighbourhoods, sector plan policies encourage:

• Improved public space and connections to the station; and
• Higher densities and taller buildings centralized around the station, moving to lower densities and building heights closer to existing residential communities.

The five station areas each have unique characteristics that contribute to the success of the corridor. For example, the Rosslyn station area includes a number of parks, public art, Dawson Terrace Community Centre, and Rosslyn Spectrum Theater, which is a performing arts venue that also hosts conferences.

The Court House station area is the Arlington County government core. It is home to the County’s courts, administrative offices and police department, as well as a farmer’s market, cinemas, and Courthouse Plaza, a pedestrian mall with shops and restaurants.

The Clarendon station area is a stable residential neighbourhood that has seen growth in local and national brand stores and restaurants. Market Common is a mixed-use urban village on a redevelopment site at the Clarendon Metro station. It is a model of compact, pedestrian-oriented development for the surrounding areas and helped revitalize the adjacent Clarendon neighbourhood. It is a 5.6 ha (13.9 ac) site with 28,000 m² (300,000 ft²) of retail space, 87 residential townhouses and 300 apartments. There are no blank street facades and street

11 Ibid.
12 Ibid.
frontage is maximized in the commercial centre. The success of Market Common lies in its immediate location to transit, walkability, and residents’ access to higher quality retail tenants.\(^\text{13}\)

The American Planning Association designated the Clarendon-Wilson Corridor, between Court House and Clarendon stations, one of the ten Great Streets in the United States in 2008. The APA said “above-average use of Metro, less reliance on automobiles, mixed-use development, increased density, and reduced carbon footprint” were some of the reasons the corridor deserved recognition. Both boulevards have been designed as “complete” streets, accommodating both cyclists in bike lanes and increasing numbers of pedestrians in widened sidewalks. Between 1996 and 2006 automobile traffic on Wilson Boulevard dropped by 16 per cent and only increased by four per cent on Clarendon Boulevard.\(^\text{14}\)

The Virginia Square-GMU station area is a centre for cultural, educational and recreational activities and includes George Mason University campus, Maury Arts Centre, Quincy Park and playfields, Arlington Central Library, and the Federal Deposit Insurance Corporation Training Facility.

The sector plan for the Ballston-MU station area sought to create a new downtown in Arlington. Ballston has always been a major retail centre and includes the Ballston Common shopping mall, Marymount University’s Ballston Center, infill housing, Stuart Park, a library and a variety of restaurants.

AWARDS

- Environmental Protection Agency, National Award for Smart Growth Achievement, Overall Excellence Category, 2002

\(^\text{13}\) Adrienne Schmitz and Jason Scully, Creating Walkable Places: Compact Mixed-Use Solutions; (Washington: Urban Land Institute, 2006) 151.


WEBSITES

www.smartgrowth.org/library/articles.asp?art=1824
www.epa.gov/smartgrowth/arlington.htm
www.planning.org/greatplaces/streets/2008/clarendonwilson.htm
# Intensification Corridors

## PORTLAND DOWNTOWN STREETCAR CORRIDOR
Portland, Oregon

![Location: Portland Downtown Streetcar Corridor](image)

## RELEVANT GROWTH PLAN POLICIES

**Policy 2.2.5:** Plan intensification corridors to achieve increased and transit-supportive densities; mixed residential, commercial, and employment uses; access to transit facilities from a range of transportation modes; and the accommodation of local services, including recreational, cultural, and entertainment uses.

**Policy 2.2.3.7 (b, c, d, e, f):** Plan and design intensification areas to provide a diverse mix of land uses to support vibrant neighbourhoods; provide high quality public open spaces with urban design standards that create attractive and vibrant places; support transit, walking and cycling; and achieve higher densities than the surrounding area, with an appropriate transition of built form to adjacent areas.

## PROJECT OVERVIEW

The Portland Downtown Streetcar Corridor was designed to redevelop and intensify land uses along a streetcar line in Portland, Oregon. The introduction of the streetcar line has been a stimulus for increased density and development along the corridor that has provided a mix of residential, commercial, institutional, and other uses. Two of the redevelopment areas are former riverfront brownfields: the Pearl District was an abandoned rail yard and South Waterfront was underused industrial land.

### PROJECT DATA

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents and Jobs Per Hectare (since 1997)*</td>
<td>134</td>
</tr>
<tr>
<td>Ratio of Jobs to Residents (since 1997)*</td>
<td>1:2</td>
</tr>
<tr>
<td>Gross Residential Density (since 1997)*</td>
<td>35 units/ha (14 units/ac)</td>
</tr>
<tr>
<td>Site Area (200-400m on either side of corridor)</td>
<td>290 ha (717 ac)</td>
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<tr>
<td>Land Use (since 1997)*</td>
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</tr>
<tr>
<td>Residential</td>
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<tr>
<td>Office</td>
<td>199,260 m² (2,144,817 ft²)</td>
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<tr>
<td>Retail</td>
<td>102,042 m² (1,098,366 ft²)</td>
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<tr>
<td>Hotel</td>
<td>56,996 m² (613,500 ft²)</td>
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<tr>
<td>Education</td>
<td>87,514 m² (942,000 ft²)</td>
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<tr>
<td>Transit</td>
<td>streetcar - 13 km (8 mi) continuous loop</td>
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<tr>
<td>Parking</td>
<td>downtown parking: SmartPark - 7 downtown City-owned parking facilities with nearly 4,000 public spaces</td>
</tr>
<tr>
<td>Date Completed</td>
<td>2001 Pearl District and Downtown, 2005-2007 RiverPlace and South Waterfront</td>
</tr>
</tbody>
</table>

* Numbers are low because they are generally based on development/renovation/expansion since 1997 only.
Portland’s Downtown Streetcar line was conceived in 1997 and its first phase was fully operational by 2001. It is a 13 km (8 mi) loop system that extends approximately 6.5 km (4 mi) in each direction, and serves 46 stops. The streetcar was built within an existing right-of-way and runs in mixed traffic, allowing on-street parking to remain in the city core. The City of Portland owns the streetcars, the rails and all other related assets while Portland Streetcar Inc., a non-profit corporation, is responsible for designing the route and stops, managing construction, and operating the system.1 The Downtown Streetcar also connects to the regional light rail transit system (TriMET) and local bus system.

The city has seen a wide range of benefits related to the Downtown Streetcar line, including daily ridership that exceeded 9,000 by fall 2005, weekday ridership hitting 11,900 in early 2008, and a reduction of 70 million annual vehicle miles traveled (VMT). Thirty per cent of ‘journey-to-work’ travel within the streetcar district now occurs via transit or walking, while only 40 per cent comes from private vehicle use.2

Since the selection of the streetcar’s route in 1997, over 10,212 residential units, and nearly 502,000 m² (5.4 million ft²) of non-residential space have been built within two blocks of the streetcar line, and 55 per cent of this new development is within one block of the line.3 This accounts for almost 90 per cent of all residential development within the entire Portland metropolitan region between 2000 and 2005.

Portland has also introduced minimum density requirements linked to public infrastructure improvements to maximize the benefits of the improvements. For example, streetcar line construction in some neighbourhoods is responsible for an increase in minimum density requirements from 38 dwelling units per hectare (15 per acre) to 270 per hectare (109 per acre). The City also uses requests for additional densities by developers to negotiate for more public amenities and infrastructure, such as parks. In addition to the increased density, a greater mix of housing types includes numerous multi-unit buildings within two blocks of the corridor. Nineteen per cent of the new or renovated residential development is affordable housing.4

PLANNING CONTEXT

The goals of the Downtown Streetcar line include:

- Using high quality transit service as an incentive to build higher density, mixed-use development within the Central City;

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• Linking neighbourhoods with a convenient and attractive transportation alternative and attracting new transit ridership; and
• Reducing short inner-city automobile trips, parking demand, traffic congestion and air pollution.5

The original intent of the Downtown Streetcar line was to act as a downtown circulator. Phase 1 only connected downtown with the Pearl District and Northwest District. Recognizing that major intensification opportunities within downtown were limited and demand for housing was strong, the streetcar line was then strategically extended to service nearby RiverPlace, a new waterfront community, and South Waterfront, an under-used former industrial area that offered excellent redevelopment potential.

A large portion of redevelopment in the streetcar corridor has been supported by the Portland Development Commission, a City of Portland agency responsible for “urban renewal” - which they define as “a state-authorized, redevelopment and finance program designed to help communities improve and redevelop areas that are physically deteriorated, suffering economic stagnation, unsafe or poorly planned.”6 The streetcar corridor is within the boundaries of three of the Commission’s 11 designated Urban Renewal Areas: 1) the River District, which overlaps the Pearl District and part of downtown; 2) the South Park Blocks, Downtown; and 3) North Macadam, which includes RiverPlace and South Waterfront. Projects planned and/or financed by the Commission within the streetcar corridor since 1997 include more than 20 housing developments, numerous parks and streetscape improvements, and major mixed-use developments.

Until 2005, the majority of growth in the streetcar corridor was in the Pearl District. Beginning in the 1990s, this area of early 20th century warehouses and rail yards was transformed into a vibrant, compact, transit-oriented, mixed-use, walkable neighbourhood. Years of city planning efforts to revitalize the district culminated in the 1998 River District Urban Renewal Plan, which provides tax increment financing for improvements within the district until 2018. According to the 2001 Pearl District Development Plan, revitalization of the district “plays a critical role in Portland’s housing strategy and in achieving regional and state goals for growth management.” 7

In 2005, the second phase extension of the streetcar line opened to serve RiverPlace, an existing 6.3 ha (15.6 ac) mixed-use waterfront development south of downtown that was completed in 2001. This project, led by the Portland Development Commission, includes

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condominium apartments, townhomes and rental units; a hotel; a public marina; stores and restaurants; office space; and an athletic centre.  

The third and fourth phase extensions of the streetcar line opened in 2006 and 2007 respectively to serve South Waterfront, an area that had been strategically targeted for a transit-oriented redevelopment. This 52.6 ha (130 ac) abandoned industrial area south of RiverPlace is nearly twice the size of the Pearl District. South Waterfront is also connected to the nearby Oregon Health and Science University via an aerial tram. When complete in 2015, South Waterfront will include approximately 5,000 housing units and 10,000 jobs.  

The 12.5 ha (31 ac) South Waterfront Central District is the first neighbourhood under construction in the area. It is being developed through an agreement among the Portland Development Commission, Oregon Health and Science University, and three private developers to build: 2,700 housing units; 140,000 m² (1.5 million ft²) of university research/clinical buildings; a hotel/conference facility; 3,500 parking spaces in university garages; streets, parks, and transit facilities.

Portland was able to exert a high level of control over the way development took shape in the streetcar corridor by involving agencies such as the Portland Development Commission and by strategically routing the corridor along mostly under-used industrial lands. The City and the Commission have a strong vision for developing complete, mixed-use, high density neighbourhoods - some of which have become internationally renowned examples of transit-oriented development.

PUBLIC REALM AND BUILT FORM

The City’s 1990 Central City Fundamental Design Guidelines, (produced by the Portland Historical Landmarks Commission, Portland Bureau of Planning, and Portland Design Commission) provide the basis for the Portland Development Commission urban renewal area guidelines. The guidelines encourage:

- Pedestrian-oriented design and providing ground floor stores along the street edge of office and residential buildings to create an active pedestrian environment;
- A graceful transition between buildings and public spaces and making public spaces friendly, inviting, and successful; and
- Building design that relates to the area’s architectural vocabulary, scale, colour, rhythm and proportion.

Many parks and open spaces, bike routes and covered bicycle parking are within the city core and serve residents in the streetcar corridor. Open spaces include two sets of contiguous blocks of parkland called the North and South Park Blocks. Both parks contain fountains, public art and playgrounds. The 1 ha (2.5 ac) North Park Blocks is in the Pearl District. The area around the 3.5 ha (8.8 ac) South Park Blocks, adjacent to Portland State University, is considered the city’s cultural...
district and includes the Oregon Symphony, the Portland Art Museum, the Arlene Schnitzer Concert Hall and the Oregon Ballet Theater. Jameson Square, a popular urban park with an interactive fountain and public sculptures, is located in the Pearl District at one of the streetcar stops. Lovejoy Fountain Park, Pettygrove Park, and Keller Fountain Park are all located at or near streetcar stops and include fountains and public art. Formerly a parking lot, Pioneer Courthouse Square is a hard surface park near the streetcar line that is the city’s central square. It includes a waterfall fountain, amphitheatre, and public art.

The Brewery Blocks, at the former site of the Blitz-Weinhard Brewery in the Pearl District, is a leading example of a mixed-use, pedestrian-oriented redevelopment project in the streetcar corridor. The five-block, 1.46 ha (3.61 ac) project is one of Portland’s largest mixed-use redevelopment projects. It features the preservation and adaptive reuse of three historic brick buildings and includes a 15,240 m² (164,040 ft²) grocery store; a 500-seat theatre, office and community space; two residential towers with ground floor, street-related retail; and office buildings with ground floor retail such as restaurants, clothing and home decor stores. This urban redevelopment has brought approximately 157,935 m² (1.7 million ft²) of retail, office and residential uses into the area. Five of the buildings have achieved U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Silver, Gold or Platinum status.

The new South Waterfront Central District continues Portland’s tradition of short walkable blocks, which provide direct access to a new 1.6 ha (4 ac) waterfront greenway and a 0.8 ha (2 ac) neighbourhood park. It is Oregon’s first ‘green’ neighbourhood - the entire development uses energy saving and water conservation techniques such as solar panels, bioswales and green roofs. The district also has the most LEED certified residential towers of any neighbourhood in the U.S. INNOVATIVE FUNDING STRATEGIES

The Portland Streetcar is part of a public/private strategy linking transportation investments with development. The City was able to finance the construction of the Downtown Streetcar line entirely within its own funding programs, without subsidies from higher levels of government. They achieved this by implementing innovative financing techniques with other planning and development initiatives, including:

- development agreements between the Portland Development Commission and private and/or institutional landowners;
- a Local Improvement District which required a one-time contribution from businesses within the district based on their size and proximity to the streetcar line;

• stakeholder and public involvement and support; and
• tax increment financing and revenue-increase-backed bonds.

The most significant funding initiative to construct the streetcar line involved increasing parking rates within the streetcar corridor by 20 cents per hour. The City then issued bonds backed by the future parking revenues, raising $28.6 million. Following that, the City, in consultation with property owners, agreed to form a Local Improvement District, which provided an additional $19.4 million in capital. Finally, an additional $21.5 million was generated using tax increment financing mechanisms. These three funding arrangements generated over 70 per cent of the required funds with the remaining $33.65 million derived from a mix of other local sources.

Funding sources for all four phases of the streetcar line include (in millions):

- Bonds backed by revenues from a $0.20/hour short-term parking rate increase in City-owned parking garages: $28.60
- Tax increment financing from the Portland Development Commission: $21.50
- Property owner contribution through Local Improvement District on non-owner occupied residences: $19.40
- Regional transportation funds: $10.00
- City funds: $8.75
- Connect Oregon: $2.10
- Reallocated transit funds from TriMet: $5.00
- Transportation land sale: $3.10
- Other sources: $4.70

$103.15 million total construction costs

16 all funds are in U.S. dollars
18 Ibid.